

REMARKS/ARGUMENTS

Applicants thank the Examiner for his careful review of this application. Claims 1, 4, 6, and 8-11 have been rejected. Claims 2 and 5 have been objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim. Claims 1 and 11 have been amended. Claims 3 and 7 have been canceled.

Claims 12-17 have been added . These claims are fully supported by the specification. No new matter is presented by these claims. Claims 12-17 have been added to more clearly and accurately claim the subject matter which Applicants regard as their invention. Additionally, Applicants have carefully reviewed the prior art of record and believe that the newly added claims are patentable in view of the prior art. Applicants respectfully request reconsideration of the application in view of the above amendments and the following remarks submitted in support thereof.

Objections to the Drawings

The Examiner objected to the drawings because the drawings do not show the features defined in claim 11. Although the Applicants believe that claim 11 is defined over the prior art of record, the Applicants have amended claim 11 to clarify that cooling liquid is contained within a device. Figures 3 and 5-7 show the cooling liquid contained within the device, as defined in claim 11. As a result, Applicants respectfully request the Examiner to withdraw the drawing objections under 37 CFR §1.83(a).

Objections to the Specification

The Examiner objected to the specification because the specification fails to provide proper antecedent basis for claim 11. As discussed above, although the Applicants believe

that claim 11 is defined over the prior art of record, the Applicants have amended claim 11 to clarify that the cooling liquid is contained within the device. The specification at page 7, lines 1-3 provides the antecedent basis for claim 11. As a result, Applicants respectfully request the Examiner to withdraw the specification objections under 37 CFR §1.75(d)(1).

Claim Rejections – 35 U.S.C. §112, first paragraph

The Examiner rejected claim 11 under 35 U.S.C. §112, first paragraph because the claimed subject matter is not supported by the original disclosure. As discussed above, although the Applicants believe that claim 11 is defined over the prior art of record, the Applicants have amended claim 11 to clarify that the cooling liquid is contained within the device. Figures 3 and 5-7 and the specification at page 7, lines 1-3 provide a written description of claim 11. As a result, Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §112, first paragraph rejection.

Obviousness Rejections under 35 U.S.C. §103(a)

Claims 1, 4, 6, and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,731,954 to Cheon in view of U.S. Patent No. 4,252,185 to Kosson. Claims 9 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cheon in view of Kosson and U.S. Patent No. 6,175,495 to Batchelder. As will be fully explained below, the combination of Cheon in view of Kosson does not raise a prima facie case of obviousness against independent claim 1.

Although the Applicants believe that the original pending claims are defined over the prior art of record, the Applicants have amended independent claim 1 to clarify that a first surface is configured to be in contact with a heat source. As such, amended independent claim 1 defines a device for the transfer of heat away from a heat source. The device

includes a base that has first and second surface and the first surface is configured to be in contact with the heat source.

Kosson does not disclose a surface of a base to be in contact with a heat source, as defined in amended independent claim 1. Specifically, Kosson discloses a heat transfer device with “a single vertically disposed member” (Abstract). The member has a “[c]ylindrical sleeving 66 ... to form an annular passageway 68” (col. 4, lines 5-7). The “[u]pper heat source 28 is connected to outer wall 16 as to place the interior of the device 10 in thermal transfer relation with heat input zone 12” (col. 2, lines 48-50). Thus, the member does not have two distinct surfaces and, instead, is comprised of a continuous, cylindrical wall. Although the heat source is in contact with the member, the heat source is connected to the entire outer wall, and not to one of two surfaces. Since Kosson discloses the heat source connected to one, continuous wall, Kosson cannot reasonably be considered to teach or suggest the base having first and second surfaces where the first surface is configured to be in contact with the heat source, as defined in amended independent claim 1.

Cheon also does not disclose a surface of a base to be in contact with a heat source, as defined in amended independent claim 1. In particular, Cheon discloses a heat transfer device 12 connected to a reservoir 48 through conduits 70, 72, and 74. The “heat transfer device 30 is mounted on the heat sink 26 to cool the component 26, 28” and “[l]iquid coolant C is circulated from the reservoir 48 to the heat transfer devices 12, 30 and back to the reservoir 48 through the conduits “ (col. 4, lines 7-9 and col. 5, lines 44-46). The Examiner effectively identified the reservoir 48, and not the heat transfer device 12 specified in the Office Action, that teaches the claimed invention because all the parts (e.g., pump, divider 62, downstream portion 60, upstream portion 58, etc.) listed by the Examiner actually belongs to the reservoir and not to the heat transfer device. As such, although the heat transfer device

makes contact with the heat sink mounted on the component (*i.e.*, a heat source), the reservoir is mounted “through the computer housing” and is not in contact with any heat source (col. 4, lines 57-58). Since Cheon discloses the reservoir mounted away from the heat source, Cheon cannot reasonably be considered to teach or suggest the base having first and second surfaces where the first surface is configured to be in contact with the heat source, as defined in amended independent claim 1.

Furthermore, claim 4 defines a pump that circulates fluid within a chamber. In support of the obviousness rejection, the Examiner noted that Cheon discloses the pump that circulates the fluid within the chamber, as defined in claim 4. Applicants respectfully traverse the Examiner’s characterization of Cheon relative to claim 4 because Cheon does not teach the pump that circulates the fluid within the chamber. In particular, as discussed above, liquid coolant “is circulated from the reservoir 48 to the heat transfer devices 12, 30 and back to the reservoir 48 through the conduits 70” (col. 5, lines 44-46). As such, the liquid is circulated outside the reservoir. In contrast, claim 4 defines the pump to circulate the fluid within the chamber. Furthermore, as shown in Figures 4 and 5, the liquid coolant does not circulate around upstream portion 58 and downstream portion 60 within the reservoir. Instead, the liquid coolant mostly flows from inlet opening 54 to the central opening 92 and, as a result, the flow is mainly confined within upstream portion within the reservoir. As Cheon merely discloses the flow of fluid outside the reservoir, Cheon cannot reasonably be considered to teach or suggest the pump that circulates fluid within the chamber, as defined in claim 4.

To establish a prima facie case of obviousness, the prior art references must teach or suggest all the claim limitations (see M.P.E.P. §2143). Here, in view of the incorrect

characterization of Cheon and Kosson, the references as combined do not teach all the features of amended independent claim 1.

Additionally, to establish a prima facie case of obviousness based on a combination of references, there must be some suggestion or motivation, either in the references or in the knowledge generally available to one having ordinary skill in the art, to combine the references in the manner proposed. In this case, Kosson specifically asserts that “[t]he device is entirely encased within a single vertically disposed member requiring no external plumbing and a minimum of fabrication.” Thus, “[t]he resulting device is both compact and cost effective” (Abstract). On the other hand, Cheon teaches a cooling system with many parts (e.g., reservoir, heat transfer devices, etc.) connected by external conduits. Kosson particularly discourages the heat system disclosed in Cheon because Cheon teaches a heat system that is not encased within a single member and requires external plumbing. External plumbing is not compact and cost effective and is particularly discouraged by Kosson. Therefore, there is no motivation for one skilled in the art to combine Cheon and Kosson in the manner proposed by the Examiner.

Accordingly, for the above-stated reasons, Applicants submit that amended independent claim 1 is patentable under 35 U.S.C. §103(a) over Cheon in view of Kosson. Claims 4, 6, and 8, each of which depends directly or indirectly from amended independent claim 1, are likewise patentable under 35 U.S.C §103(a) over Cheon in view of Kosson for at least the same reasons set forth for amended independent claim 1. Furthermore, claims 9 and 10 are likewise patentable under 35 U.S.C §103(a) over Cheon in view of Kosson and Batchelder for at least the same reasons set forth for amended independent claim 1. As a result, Applicants respectfully request the Examiner to withdraw the 35 U.S.C. §103(a) rejection for claims 1, 4, 6, and 8-11.

Conclusion

In view of the foregoing, the Applicants respectfully submit that all the acknowledged pending claims 1-2, 4-6, and 8-17 are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested. If the Examiner has any questions concerning the present Amendment, the Examiner is requested to contact the undersigned at (408) 749-6900 ext. 6924. If any additional fees are due in connection with filing this Amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. SUNMP302). A duplicate copy of the transmittal is enclosed for this purpose.

Respectfully submitted,
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